

Revolutionary Wake Hazard Assessment Tool, Phase I

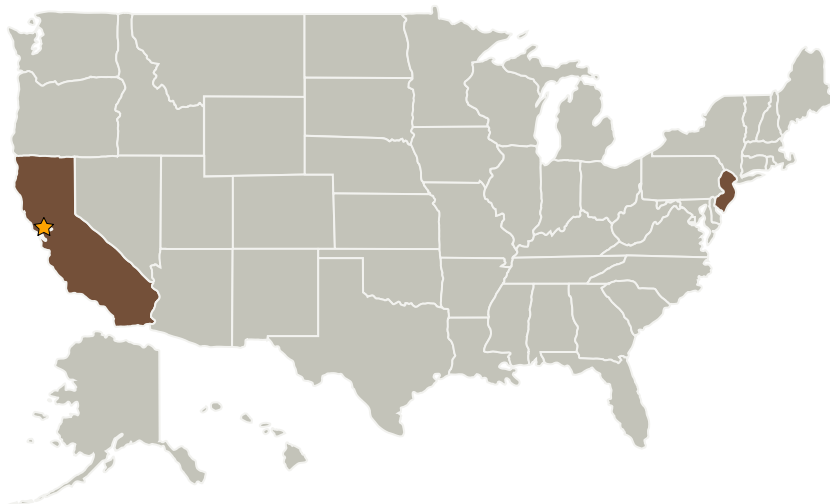
Completed Technology Project (2005 - 2005)



Project Introduction

Continuum Dynamics, Inc. (CDI) has developed a Multiple Aircraft Simulation Tool (MAST) that revolutionizes the ability to predict and assess wake interactions associated with multiple aircraft operating in the vicinity of one another. This tool incorporates CDI's state-of-the-art free-vortex wake modeling methods and aircraft wake diffusion and dissipation models within established flight simulation technology. This new technology is ideally suited to support the U.S. air traffic management system in evaluating methods to safely improve operational efficiency. The proposed effort is to enhance and repackage this technology in a manner targeted directly toward modeling "series" and "parallel" fixed (and rotary) wing aircraft approach patterns. The large body of recent data obtained from field tests and advanced CFD will be utilized to provide a new level of accuracy and efficiency in the prediction of the influence of turbulence, wind shear, stratification and ground effect on vortex wake evolution and decay. The final tool will be unprecedented in its range of application, accuracy and ease of use in modeling the wake interactions of multiple fixed wing and rotary-wing aircraft operating in a terminal area environment and will be ideal for planning and evaluating NASA's multiple corridor and simultaneous non-interference operational concepts.

Primary U.S. Work Locations and Key Partners



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Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Lead Center / Facility:

Ames Research Center (ARC)

Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

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Organizations Performing Work	Role	Type	Location
★ Ames Research Center(ARC)	Lead Organization	NASA Center	Moffett Field, California
Continuum Dynamics, Inc.	Supporting Organization	Industry	Ewing, New Jersey

Primary U.S. Work Locations

California	New Jersey
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Project Management

Program Director:

Jason L Kessler

Program Manager:

Carlos Torrez

Principal Investigator:

Todd Quackenbush

Technology Areas

Primary:

- TX16 Air Traffic Management and Range Tracking Systems
 - └ TX16.3 Traffic Management Concepts